

Semester:	III	Branch:	IMBA(5Y) / BBA (Aviation)
Regular Mid Semester Examination September 2022			
Subject Code:	BB0303	Subject Name:	Introduction to Business Statistics
Date:	13-09-2022	Time:	9:30 - 11:00 AM
Day:	Tuesday	Total Marks:	40

## Instructions:

- Figures to the right indicate full marks.
- Make Suitable assumptions wherever necessary & indicate.

Q.1	(a)	The weekly earnings of 187 employees of a company is given below. Find the mean of the weekly earnings.							05																		
		<table><tr><td>Weekly earnings (in Rs.)</td><td>100</td><td>120</td><td>140</td><td>160</td><td>180</td><td>200</td><td>210</td></tr><tr><td>No. Of employees</td><td>5</td><td>8</td><td>12</td><td>16</td><td>22</td><td>44</td><td>80</td></tr></table>							Weekly earnings (in Rs.)	100	120	140	160	180	200	210	No. Of employees	5	8	12	16	22	44	80			
Weekly earnings (in Rs.)	100	120	140	160	180	200	210																				
No. Of employees	5	8	12	16	22	44	80																				
	(b)	Explain the terms: (i) Coefficient of Variation (ii) Standard Deviation							05																		
	(c)	Explain Correlation analysis and its types.							05																		
Q-2	(a)	Find Median of the following data:							05																		
		<table><tr><td>Vacations availed in a year</td><td>0-10</td><td>10-20</td><td>20-30</td><td>30-40</td><td>40-50</td><td>50-60</td><td>60-70</td><td>70-80</td></tr><tr><td>No. of Emp.</td><td>2</td><td>18</td><td>30</td><td>45</td><td>35</td><td>20</td><td>6</td><td>3</td></tr></table>							Vacations availed in a year	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	No. of Emp.	2	18	30	45	35	20	6	3	
Vacations availed in a year	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80																			
No. of Emp.	2	18	30	45	35	20	6	3																			
		OR																									
	(a)	Calculate the mode of sales distribution of the units of item during the 20 days period.							05																		
		<table><tr><td>Sales Volume</td><td>53-56</td><td>57-60</td><td>61-64</td><td>65-68</td><td>69-72</td><td>72 and above</td></tr><tr><td>No. of Days</td><td>2</td><td>4</td><td>5</td><td>4</td><td>4</td><td>1</td></tr></table>							Sales Volume	53-56	57-60	61-64	65-68	69-72	72 and above	No. of Days	2	4	5	4	4	1					
Sales Volume	53-56	57-60	61-64	65-68	69-72	72 and above																					
No. of Days	2	4	5	4	4	1																					
	(b)	The administrator of a Georgia hospital surveyed the number of days 200 randomly chosen patients stayed in the hospital following an operation. The data are:							05																		
		<table><tr><td>Hospital stay in days</td><td>1-3</td><td>4-6</td><td>7-9</td><td>10-12</td><td>13-15</td><td>16-18</td><td>19-21</td><td>22-24</td></tr><tr><td>Frequency</td><td>18</td><td>90</td><td>44</td><td>21</td><td>9</td><td>9</td><td>4</td><td>5</td></tr></table> <p>Calculate the standard deviation.</p>							Hospital stay in days	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	Frequency	18	90	44	21	9	9	4	5	
Hospital stay in days	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24																			
Frequency	18	90	44	21	9	9	4	5																			



OR

- (b) The number of employees, average daily wages per employee and variance of daily wages per employee for two Factories are given below: 05

	Factory 'A'	Factory 'B'
Number of Employees	50	100
Average daily wages (Rs.)	120	85
Variance of daily wages (Rs.)	9	16

Which factory has more uniform wages?

- Q-3 (a) The administrator of a hospital has ordered a study of the amount of time a patient must wait before being treated by emergency room personal. The following data were collected during a typical day: 05

Waiting Time (Minutes)										
12	15	21	20	24	3	12	17	29	18	70
26	4	7	14	25	1	27	15	16	5	

Construct a frequency distribution using 6 classes.(Use 1- 5, 6 -10, and so on). Also determine cumulative and relative frequency distribution within each class.

OR

- Q-3 (a) Find the Karl Pearson's coefficient of correlation from the following data: 05

Cost	39	65	62	90	82	75	25	98	36	78
Sales	47	53	58	86	62	68	60	91	51	84

- Q-3 (b) Calculate First and Third quartiles from the data given below. 05

Class	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40
Frequency	4	5	6	10	11	9	4	1

- Q-3 (c) The ranking of 10 students in accordance with their performance in two subjects A and B are as follows: Calculate the rank coefficient of correlation coefficient and comment on its value. 05

A	6	5	3	10	2	4	9	7	8	1
B	3	8	4	9	1	6	10	7	5	2